

NAME: \_\_\_\_\_

Solve each equation.

1.  $\frac{5}{6}x - \frac{2}{3} = -4$

2.  $0.08 - 0.02(x + 3) = -0.02(3 - x)$

3.  $-2(t - 5) + 4t = 5t - 5$

4. Translate the words into an algebraic equation. Then solve the equation.

Twice the difference of a number and 8 is equal to three times the sum of the number and 7. Find the number.

5. Solve the inequality. Write the solution in interval notation.

$$4x - 5 > 2x - 7$$

PROBLEMS 6-9: PERFORM THE INDICATED OPERATIONS

6.  $(8y + 4) - (-5y^2 - 4y + 4)$

7.  $(4x - 9)(2x + 4)$

8.  $(6x + 7)^2$

9.  $\frac{x^2 + 10x + 24}{x + 6}$

10. Simplify the expression. Write the answer with positive exponents.  $\frac{-14a^5b}{7ab^6}$

PROBLEMS 11-15: Completely factor each polynomial.

11.  $16y^5 + 36y^3$

12.  $x^2 - 7x - 8$

13.  $35x^2 + 34x + 8$

14.  $25x^2 - 36$

15.  $25x^2 + 60x + 36$

16. Simplify:  $\frac{5x+25}{x^2+5x}$

17. Divide:  $\frac{(x+3)^2}{x-3} \div \frac{x^2-9}{3x-9}$

18. Subtract:  $\frac{10}{x^2+10x+9} - \frac{3}{x+9}$

19. Solve:  $\frac{6y}{y-8} + 2 = \frac{4y}{y-8}$

20. Solve the following:

When Maria mows Mr. Johnson's lawn, it takes her 3 hours. It takes Mark 4 hours. Find how long it takes Maria & Mark to mow the lawn together.

21. Graph the line  $y = \frac{3}{2}x - 2$ . Label at least two points (with their coordinates) on the line.22. Find the x- and the y-intercepts:  $8x - 2y = -8$   
Write your answers as ordered pairs.

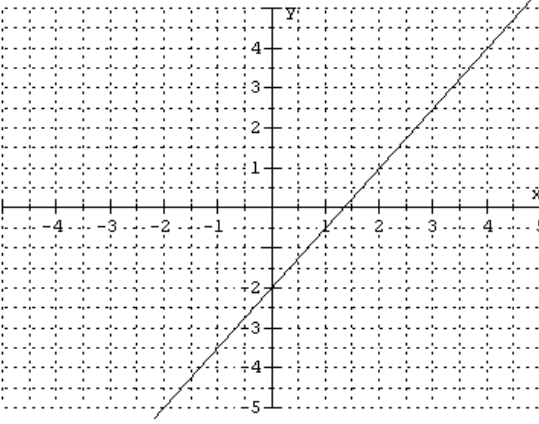
23. Find the slope of the line passing through the points (-10, -2) and (-8, 4).

24. Determine whether the pair of lines are parallel, perpendicular, or neither.

$$\begin{array}{lll} a) L_1 : y = \frac{4}{9}x + 3 & b) L_1 : y = \frac{4}{9}x + 3 & c) L_1 : y = \frac{4}{9}x + 3 \\ L_2 : -9y = -4x & L_2 : -9y = 4x & L_2 : -4y = 9x \end{array}$$

25. Write an equation of the line whose slope is 7 and that passes through the point (-6, 7). Write your answer in slope-intercept form.

ANSWERS

1. -4	20. $\frac{12}{7}$ or $1\frac{5}{7}$ hrs
2. 2	
3. 5	21. 
4. -37	
5. $(-1, \infty)$	
6. $5y^2 + 12y$	
7. $8x^2 - 2x - 36$	
8. $36x^2 + 84x + 49$	
9. $x + 4$	
10. $\frac{-2a^4}{b^5}$	
11. $4y^3(4y^2 + 9)$	
12. $(x+1)(x-8)$	
13. $(7x+4)(5x+2)$	22. $(0, 4)$ $(-1, 0)$
14. $(5x+6)(5x-6)$	23. 3
15. $(5x+6)^2$	24. a) parallel b) neither c) perpendicular
16. $\frac{5}{x}$	
17. $\frac{3(x+3)}{x-3}$	
18. $\frac{-3x+7}{(x+9)(x+1)}$	25. $y = 7x + 49$
19. 4	